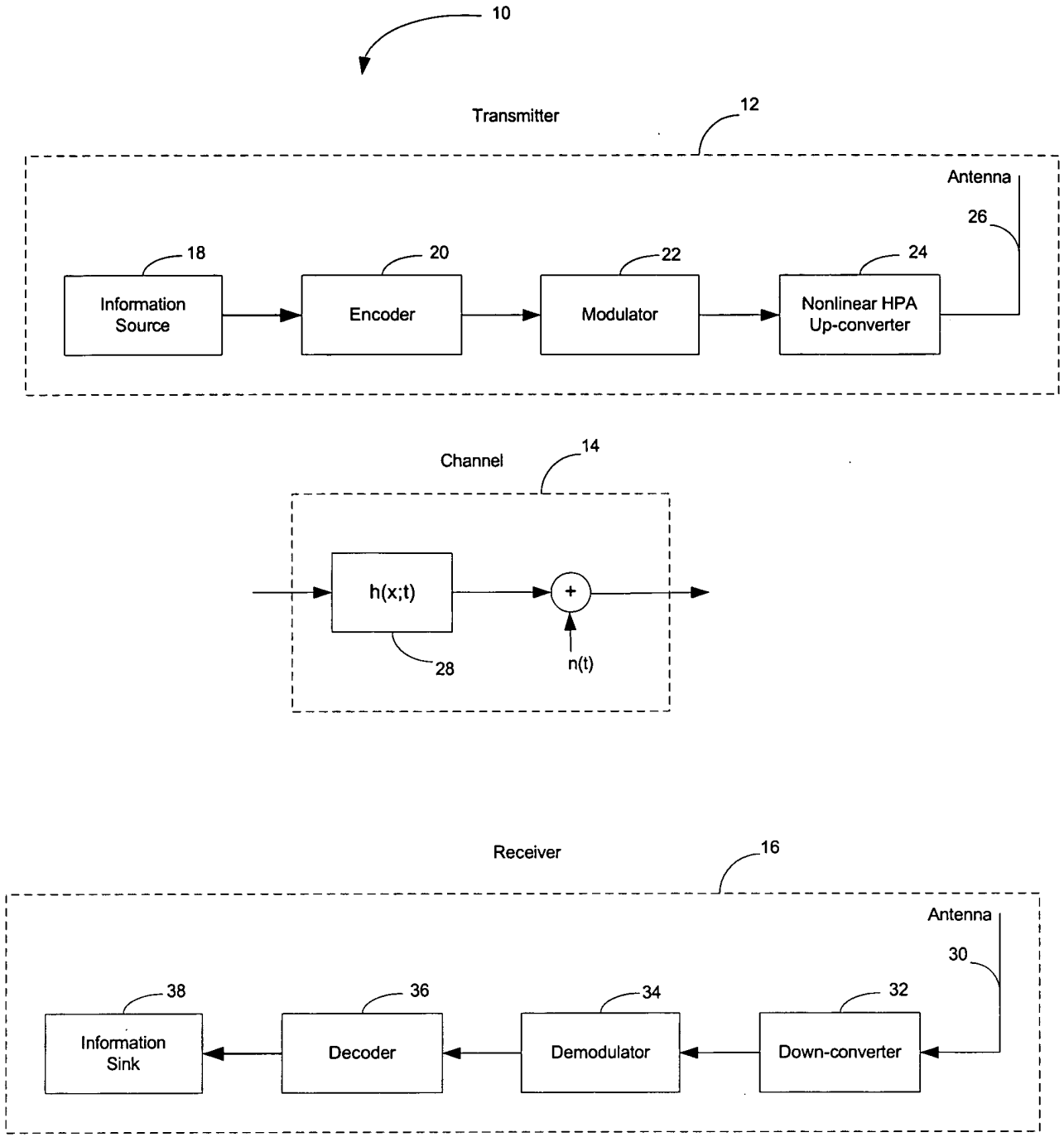
10
Transmitter
12
Antenna
26
18
20
22
24
Information Source
Encoder
Modulator
Nonlinear HPA Up-converter
Channel
14
h(x;t)
+
28
n(t)
Receiver
16
Antenna
30
38
36
34
32
Information Sink
Decoder
Demodulator
Down-converter

FIG. 1

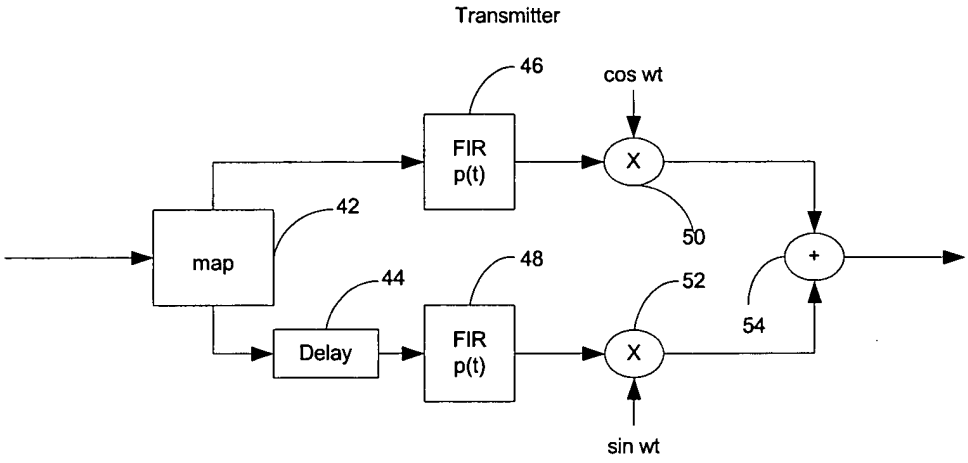
Transmitter
46
cos wt
FIR
p(t)
X
50
42
map
+
44
48
52
54
Delay
FIR
p(t)
X
sin wt

FIG. 2

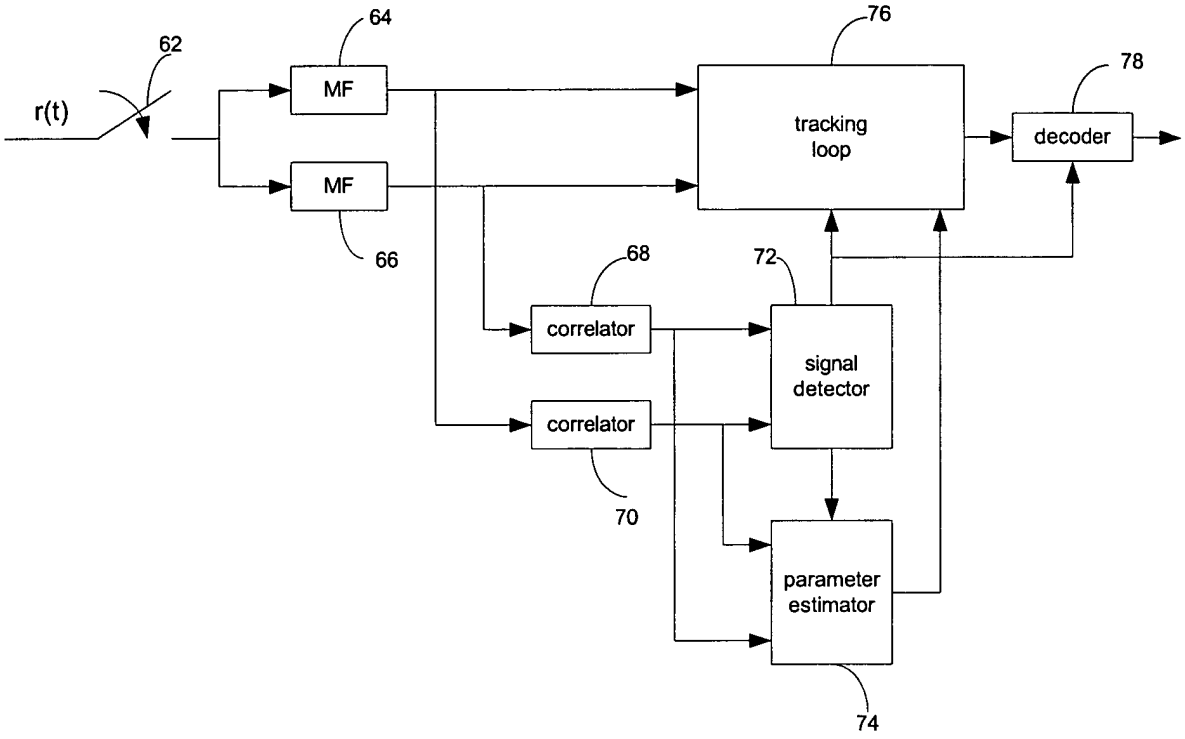
r(t)
62
64
MF
MF
66
76
tracking loop
78
decoder
68
correlator
correlator
70
72
signal detector
parameter estimator
74

FIG. 3

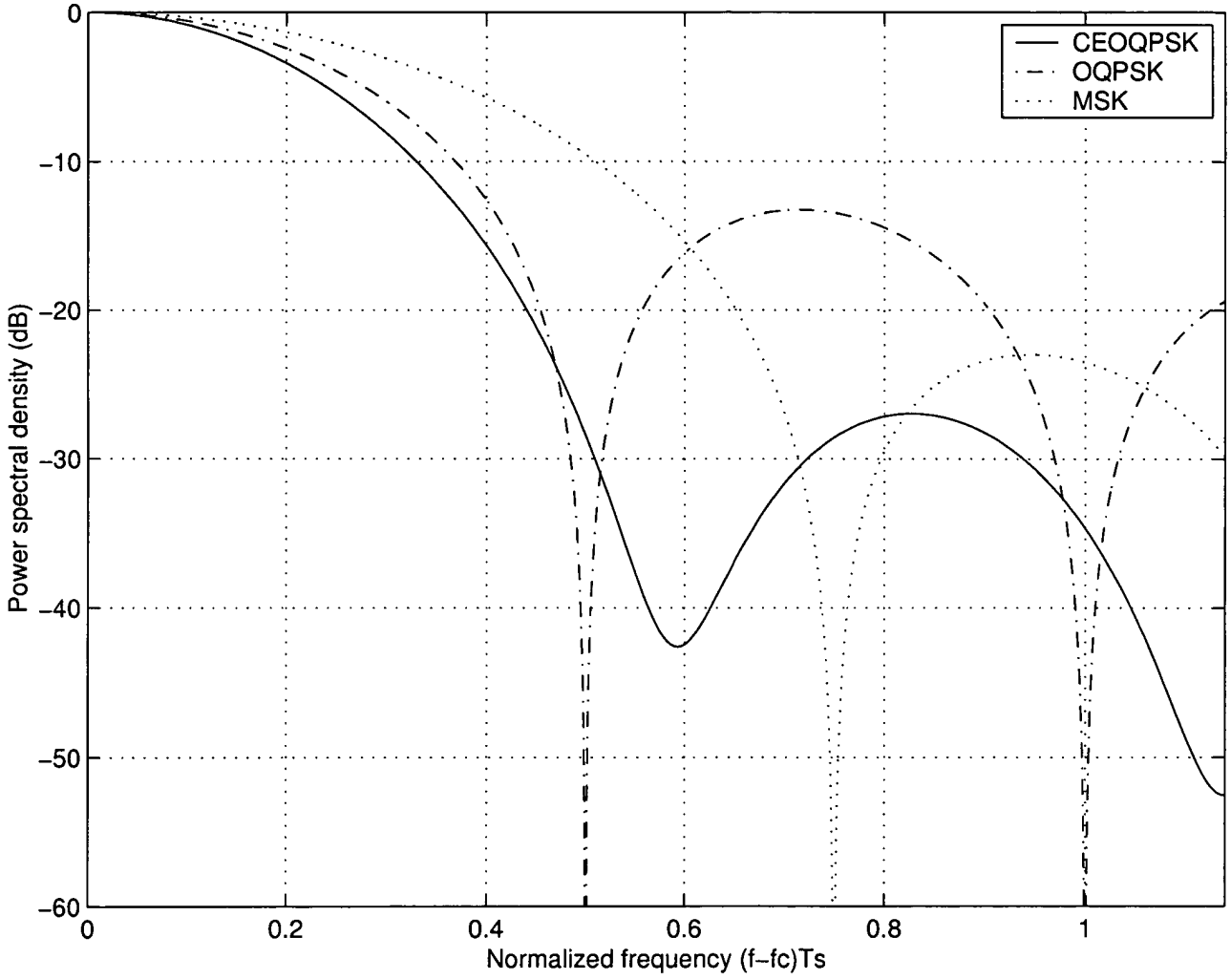
CEOQPSK
OQPSK
MSK
Power spectral density (dB)
Normalized frequency (f−fc)Ts
0
−10
−20
−30
−40
−50
−60
0
0.2
0.4
0.6
0.8
1

FIG. 4

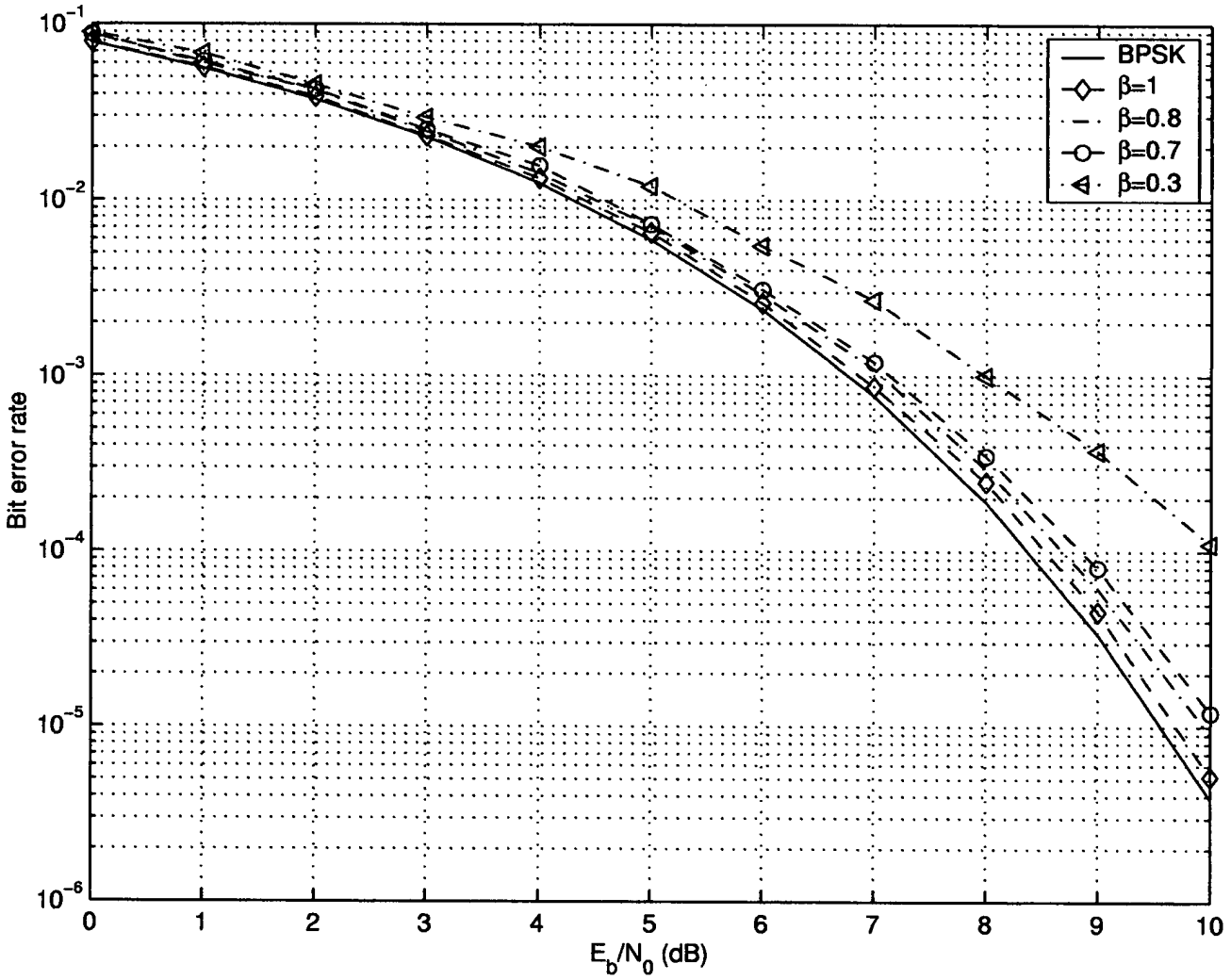
BPSK
β=1
β=0.8
β=0.7
β=0.3
Bit error rate
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
0
1
2
3
4
5
6
7
8
9
10
E_b/N_0 (dB)

FIG. 5

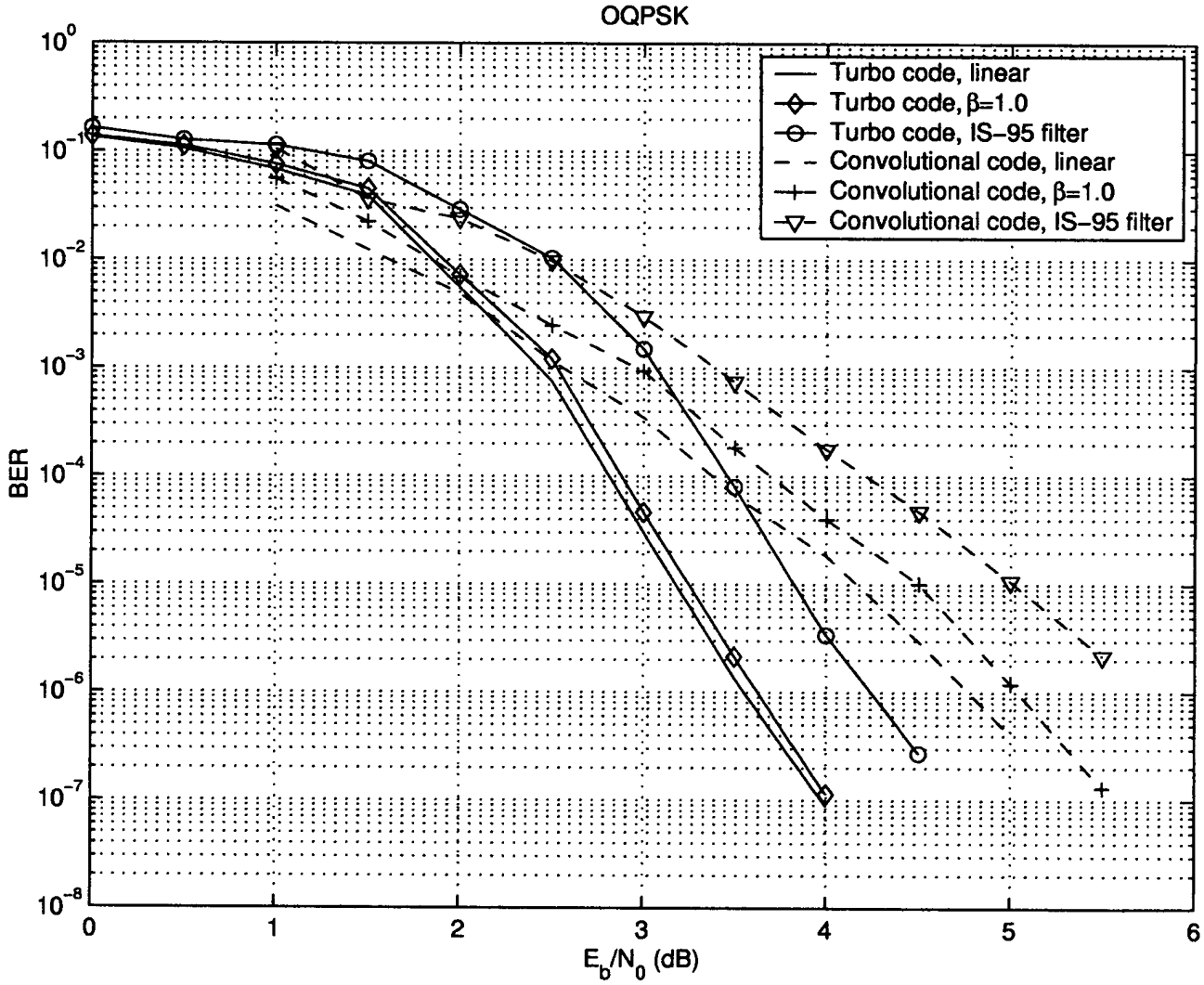
OQPSK
Turbo code, linear
Turbo code, β=1.0
Turbo code, IS-95 filter
Convolutional code, linear
Convolutional code, β=1.0
Convolutional code, IS-95 filter
BER
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
0
1
2
3
4
5
6
E_b/N_0 (dB)

FIG. 6

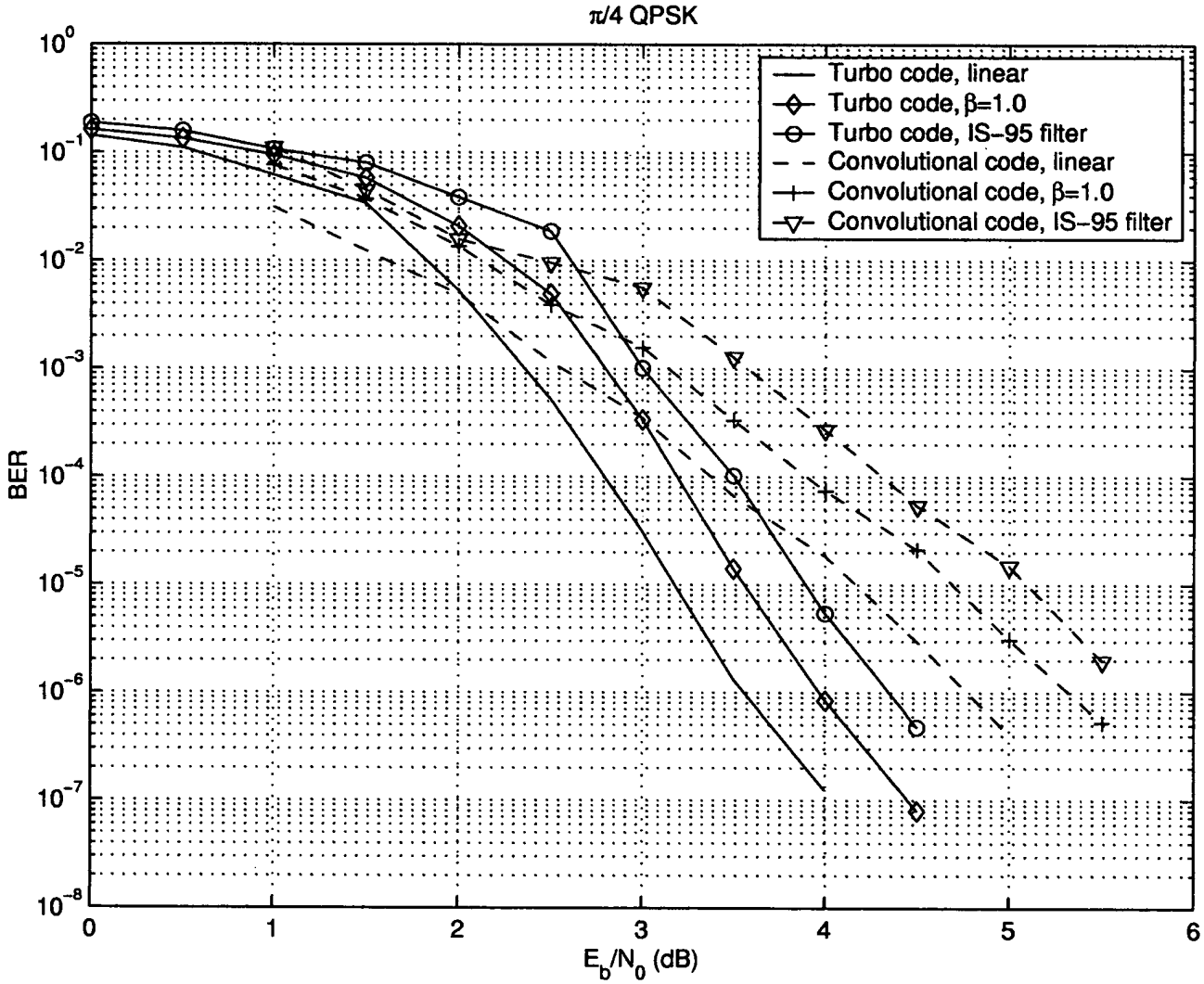
π/4 QPSK
Turbo code, linear
Turbo code, β=1.0
Turbo code, IS-95 filter
Convolutional code, linear
Convolutional code, β=1.0
Convolutional code, IS-95 filter
BER
E_b/N_0 (dB)
10^0
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
0
1
2
3
4
5
6

FIG. 7

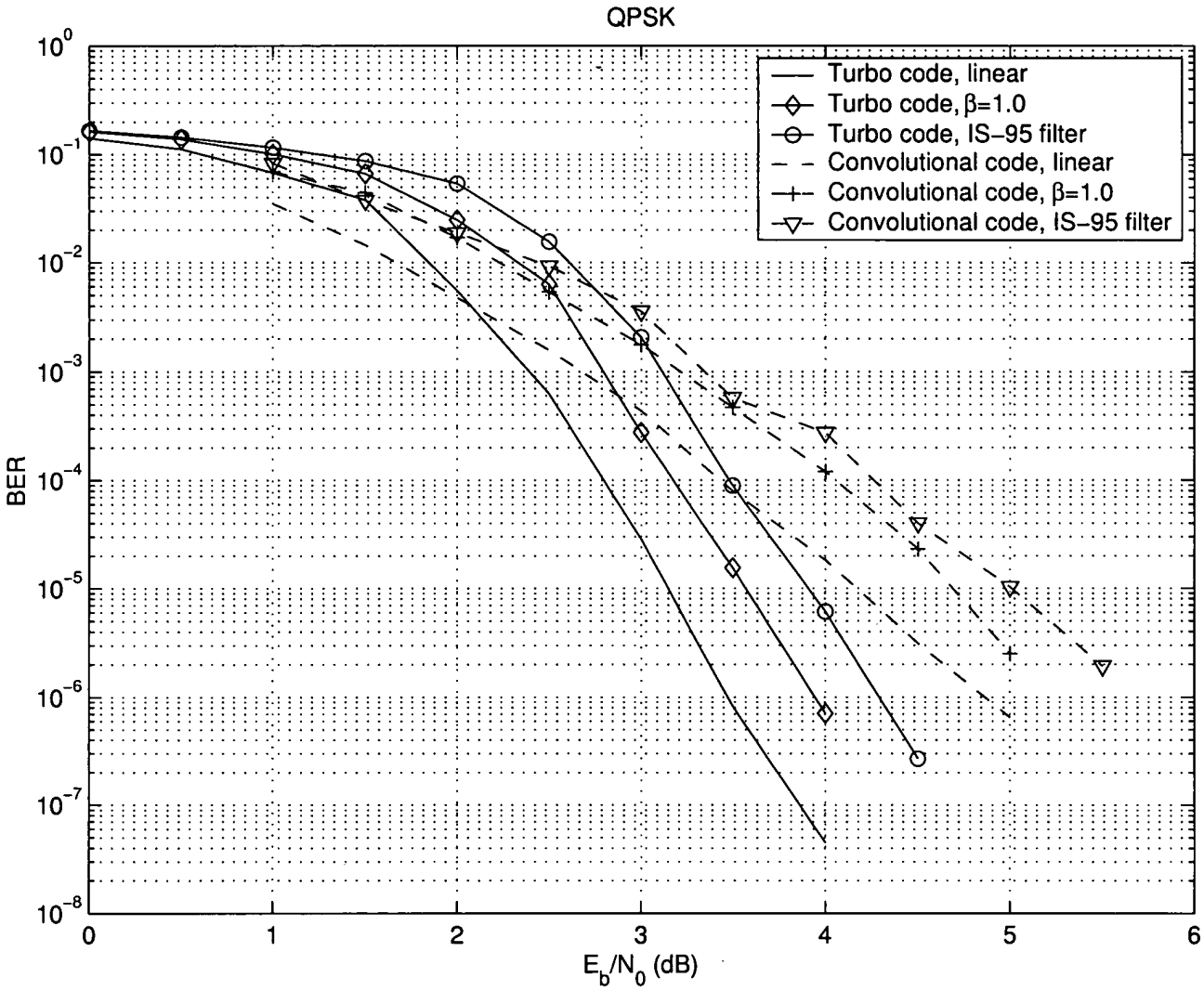
QPSK
Turbo code, linear
Turbo code, β=1.0
Turbo code, IS–95 filter
Convolutional code, linear
Convolutional code, β=1.0
Convolutional code, IS–95 filter
BER
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
10^{-8}
0
1
2
3
4
5
6
E_b/N_0 (dB)

FIG. 8

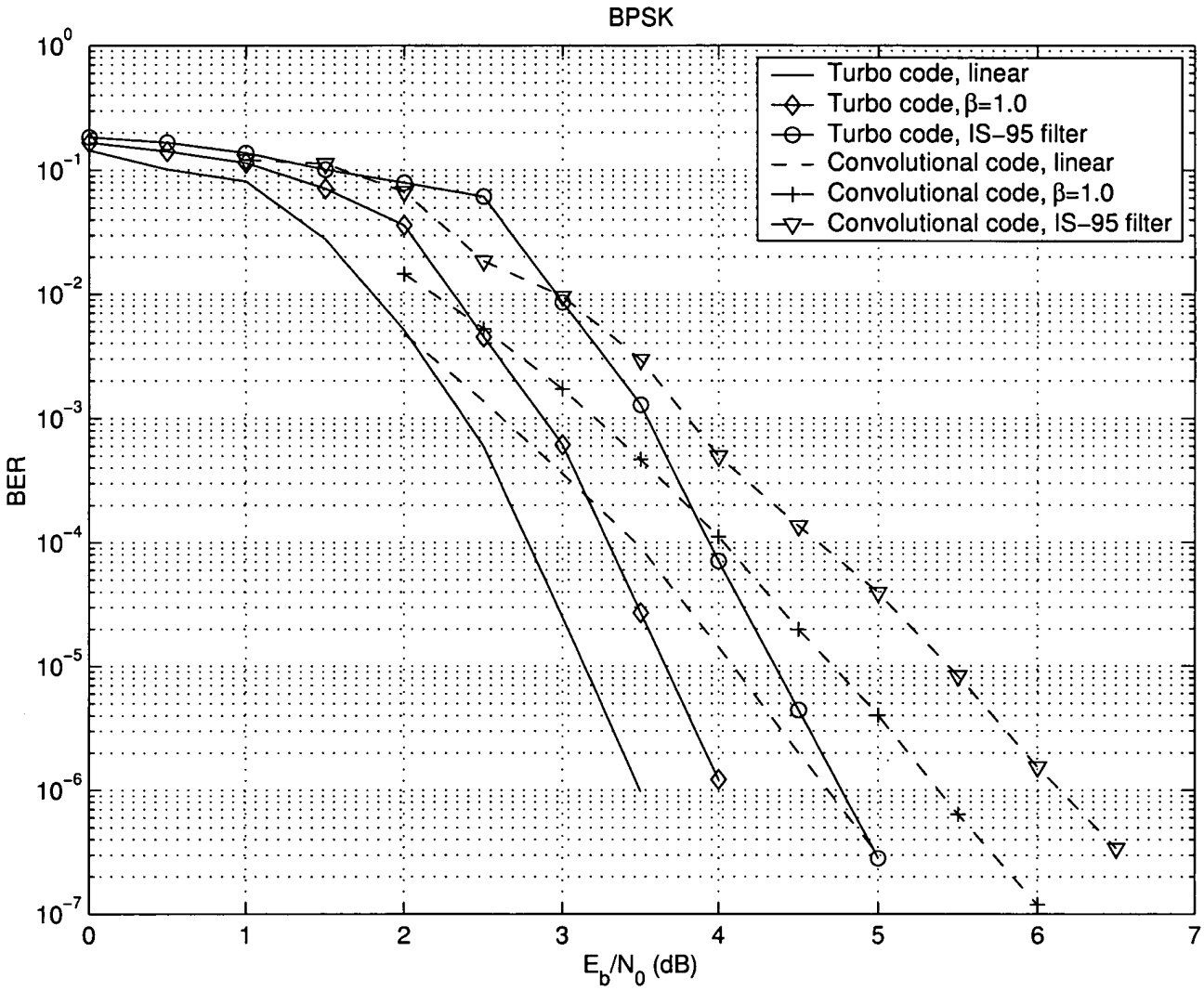
BPSK
Turbo code, linear
Turbo code, β=1.0
Turbo code, IS-95 filter
Convolutional code, linear
Convolutional code, β=1.0
Convolutional code, IS-95 filter
BER
10^0
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
0
1
2
3
4
5
6
7
E_b/N_0 (dB)

FIG. 9